WE CLAIM:

1. A method of increasing the BW allocated to working traffic within a transport network connecting two data terminals, comprising:

distributing the total BW available for said transport network into a first BW and a second BW;

transmitting traffic in a data pipe of said first BW during normal operation of said transport network; and
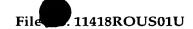
squeezing said data pipe to said second BW whenever a protection switch occurs in said transport network;

wherein flow control mechanisms present at said data terminal operate to compensate for the change from said first to said second BW .

2. A method as claimed in claim 1, wherein said step of squeezing comprises changing the data rate of said data terminal between a fast rate during normal operation and a slow rate during a protection switched operation.

3. A method as claimed in claim 1, wherein said first BW is higher than said second BW.

4. A method as claimed in claim 1, wherein said protection switch operates at the path sublayer of said transport network, with said first BW higher than said second BW.

5. A method as claimed in claim 4, wherein said step of transmitting comprises selecting a first route between said end nodes, allocating said first BW from the unprotected connections class, and accommodating said data pipe along said first route.

6. A method as claimed in claim 5 wherein said step of squeezing said data pipe comprises selecting a second route between said end

nodes, allocating said second BW from the unprotected connections class, and accommodating the traffic pipe along said second route.

7. A method as claimed in claim 3, wherein said protection switch
5   operates at the line sublayer of said transport network between two tandem nodes.

8. A method as claimed in claim 7, wherein said step of transmitting comprises allocating said first BW from the protected and
10 unprotected connections classes and accommodating said data pipe along a path between said two data terminals, including said two tandem nodes.

9. A method as claimed in claim 8, wherein said step of squeezing
15 said data pipe comprises allocating said second BW to said path.

10. A method of increasing the BW allocated to working traffic within a transport network connecting two data terminals, comprising:
        selecting a first and a second route between said end nodes and
20 distributing the total BW available for said transport network between said routes as a first and a second BW;
        transmitting traffic in a data pipe of said total BW during normal operation of said transport network along said first and said second routes; and
25   squeezing said data pipe to one of said first and second BW, whenever a protection switch occurs in said transport network, wherein flow control mechanisms present at said data terminal operate to compensate for the change from said first to said second BW.

30   11. A method as claimed in claim 10, wherein said step of transmitting comprises operating said data terminals to provide load sharing between said two routes, and accommodating said traffic along said first and second routes.
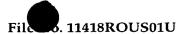
12. A method as claimed in claim 10, wherein said step of squeezing comprises accommodating said traffic along said first route whenever said second route is interrupted, while maintaining the BW allocated to said first route unchanged.

13. A method as claimed in claim 12, wherein said step of squeezing comprises changing the data rate of said data terminal between a fast rate during normal operation and a slow rate during a protection switched operation.

14. A method as claimed in claim 11, wherein said protection switch is operating at path sublayer of said transport network, and said first and second BW are allocated from the unprotected connections class.

15. A method as claimed in claim 11, wherein said protection switch is operating at line sublayer of said transport network, and said first and second BW are allocated from the protected and ET connections class, respectively.

16. A method as claimed in claim 1, wherein said transport network is provided with means for path protection switching, said traffic pipe uses a first route of said first BW during normal operation and a diverse route during a path protection switch, and said first BW and said second BW are selected from the unprotected connections class.

17. A method as claimed in claim 1, wherein said transport network is provided with path protection switching, and said first BW and said second BW are selected from the unprotected connections class.

18. An optical communication network for exchanging traffic between two data terminals connected at a respective end node, and recovering traffic in case of a fault at the physical layer, comprising:

an adaptive rate interface at each said end node for changing the

5   transmit and receive rate between a fast rate to a slow rate;

a link between said adaptive rate interfaces for accommodating a traffic pipe of a first BW corresponding to said fast rate during normal operation, and a squeezed traffic pipe of a second BW corresponding to said slow rate during a protection switch; and

10   protection switching means for detecting an interruption in said traffic pipe and operating a protection switch.

19. A network as claimed in claim 18, wherein said protection switching means operate at path sublayer.

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20. A network as claimed in claim 19, wherein said adaptive rate interface is provided in said data terminal and operates to automatically change the data rate of the received and transmitted traffic between said fast and said slow rates, in response to response to a flow control

20   parameter

21. A network as claimed in claim 19, wherein said adaptive rate interface is provided in said data terminal and operates to change the data rate of the received and transmitted traffic between said fast and said

25   slow rates in response to a rate change signal received form said protection switching means.

22. A network as claimed in claim 18, wherein said adaptive rate interface comprises:
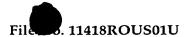
30   a plurality of ports on said data terminal;

means for turning on and off each said port, for automatically changing the operation data rate of the received and transmitted traffic

between said fast and said slow rate in response to response to a flow control parameter.

23. A network as claimed in claim 18, wherein said adaptive rate interface comprises:

a plurality of ports on said data terminal;

means for turning on and off each said port, for changing the operation data rate of the received and transmitted traffic between said fast and said slow rate in response to a rate change signal received form said protection switching means.

24. A network as claimed in claim 18, wherein said adaptive rate interface comprises an Ethernet mapper connected between said data terminal and said node for changing the mapping of data packets between said fast and said slow rates.

25. A method of operating an adaptive rate interface connected between a data terminal and an optical communication network comprising:

exchanging traffic of a first rate between said data terminal and said network in a normal state of operation;

exchanging traffic of a second rate between said data terminal and said network during a squeezed state of operation; and

transiting from said squeezed state to said normal state during a recovery state.

26. A method as in claim 25, wherein said network is a SONET/SDH network, said first rate is a STS-N, and said second rate is a STS-M, where M<N.

27. A method as claimed in claim 26, wherein transition from said normal state to said squeezed state begins on receipt of STS path AIS.

28. A method as claimed in claim 26, wherein transition from said squeezed state to said normal state begins on receipt of a recovered path AIS.

5   29 28. A method as claimed in claim 26, wherein transition from said squeezed state to said recovery state begins on receipt of an unequipped code on non-data filed STSs.

30 29. A method as claimed in claim 26, wherein transition from said recovery state to said normal state begins when no path conditions are detected in the incoming traffic.

31 30. A method as claimed in claim 26, wherein transition from said recovery state from said squeezed state begins on receipt of path AIS of all said STS-M.